

REMARKS

Claims 1-8, 16, 17, 20, 23, 26, and 27 are pending in this application.

Applicant has amended claims 1, 16, 20, and 23, and has added new claims 26 and 27.

These changes do not introduce any new matter.

Allowable Subject Matter

Applicant appreciates the Examiner's indication that claims 5-8 and 17 define allowable subject matter. Applicant's responses to the prior art rejections entered in the Office Action are set forth below.

Rejections under 35 U.S.C. § 103

Applicant respectfully requests reconsideration of the rejection of claims 1-3, 16, 20, and 23 under 35 U.S.C. § 103(a) as being unpatentable over *Shimizu et al.* ("*Shimizu*") (US 2003/0112293 A1) in view of *Otsuki* (US 6,652,067 B2). As will be explained in more detail below, the combination of *Shimizu* in view of *Otsuki* would not have rendered the subject matter defined in independent claims 1, 16, 20, and 23, as amended herein, obvious to one having ordinary skill in the art.

In formulating the obviousness rejection of independent claim 1, the Examiner acknowledges that the *Shimizu* reference does not disclose an image output device including:

- 1) a number data receiving module that receives the dot number data of the pixel group with respect to each type of dot;
- 2) a priority order specification module that specifies a priority order of individual pixels in the pixel group for dot creation;
- 3) a pixel position determination module that determines positions of dot-on pixels in the pixel group with respect to each type of dot, based on the dot number data of the pixel group with respect to each type of dot and the specified priority order; and

4) a dot formation module that creates the multiple different types of dots at the determined positions of the dot-on pixels.

The Examiner asserts, however, that the above features 1) to 4) are shown by *Otsuki*. The Examiner concludes that it would have been obvious to one having ordinary skill in the art to have modified the *Shimizu* reference to include an image output device having the features shown by *Otsuki* so as to be able to print different types of dots at different densities and to increase printing speed (see the Office Action at pages 4-5). Applicant respectfully traverses the Examiner's position regarding the alleged obviousness of the claimed subject matter.

The *Otsuki* reference is intended to form multiple dots at the position of a single pixel by generating mask signals. The mask pattern is changed for each of the pixels. Referring to Figure 10 of *Otsuki*, it might appear that dot formation is controlled with respect to four pixels, however, Figure 10 indicates variations of *a single pixel*, and only explains a dot formation mechanism for forming different sizes of dots, namely, large, medium, and small dots by dividing the signal for forming the dots on the pixel into four and masking them. As such, Figure 10 of *Otsuki* does not show a pixel group including multiple pixels.

In view of the foregoing, the *Otsuki* reference does not disclose an image output device having the above-listed features 1) to 4). For example, in support of the obviousness rejection, the Examiner asserts that the hardware/software that performs the function disclosed in column 5, lines 50-60, of *Otsuki* corresponds to the claimed priority order specification module (see the Office Action at page 4). The portion of the *Otsuki* reference on which the Examiner relies describes the mask pattern of a piezo drive signal for forming large, medium, and small dots *inside a single pixel*. This is intended to increase the types of dots that can be formed in a single pixel, and is significantly different from the position and priority order of dots in a 2 x 4 pixel (see, for example, claim 1 of *Otsuki* which recites, in part, "forming any of N types of dots which are different in at least one of an ink amount and

a dot-formed position in a pixel area”). Thus, in contrast with the claimed subject matter, the focus of the *Otsuki* reference is the dots constituting *one pixel*.

For at least the foregoing reasons, the subject matter defined in claim 1 is distinguishable from the *Shimizu* and *Otsuki* references applied by the Examiner. Nevertheless, in an effort to expedite prosecution of the subject application, Applicant has amended claim 1 to specify that each pixel group has a two-dimensional size comprising multiple pixels arranged in primary and secondary scan directions. This feature is neither disclosed nor suggested in either the *Shimizu* reference or the *Otsuki* reference. As such, the combination of the *Shimizu* and *Otsuki* references would not have rendered the subject matter defined in present claim 1 obvious to one having ordinary skill in the art.

Applicant has amended each of independent claims 16, 20, and 23 along the same lines that claim 1 has been amended. Thus, the arguments set forth above regarding present claim 1 also apply to present claims 16, 20, and 23.

Accordingly, independent claims 1, 16, 20, and 23, as amended herein, are patentable under 35 U.S.C. § 103(a) over the combination of *Shimizu* in view of *Otsuki*. Claims 2 and 3, each of which depends from claim 1, are likewise patentable under 35 U.S.C. § 103(a) over the combination of *Shimizu* in view of *Otsuki* for at least the same reasons set forth above regarding claim 1.

Applicant respectfully requests reconsideration of the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over *Shimizu* and *Otsuki*, and further in view of *Shimada et al.* (“*Shimada*”) (US 6,293,643 B1). Claim 4 depends from claim 1. The *Shimada* reference does not cure the above-discussed deficiencies of the combination of the *Shimizu* and *Otsuki* references relative to the subject matter defined in present claim 1. Accordingly, claim 4 is patentable under 35 U.S.C. § 103(a) over the combination of *Shimizu* in view of *Otsuki* and *Shimada* for at least the reason that this claim depends from claim 1.

New Claims

As noted above, Applicant has added new claims 26 and 27. Each of claims 26 and 27 depends from claim 1. As such, claims 26 and 27 are patentable over the prior art of record for at least the same reasons set forth above with regard to claim 1.

Conclusion

In view of the foregoing, Applicant respectfully requests reconsideration and reexamination of claims 1-8, 16, 17, 20, and 23, as amended herein, as well as examination of claims 26 and 27, and submits that these claims are in condition for allowance. Accordingly, a notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at **(408) 749-6902**. If any additional fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. MIPFP083).

Respectfully submitted,
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